ANNEX A · BACK TO THE SHELL

Name: _____ **Date:** _____

Work in `deb-lab`, in a terminal, as your normal user. Write the command that worked, or the answer, on each line.

PART A **Rebuild your shell.** In pairs: one reads, one types. No notes. Swap at mission 6.

1. Where am I?

2. Create `tramuntana/dev/api` in your home, one command.

3. Go into `api` (relative path). Then home, shortest way.

4. Create an empty `notes.txt` inside `tramuntana`.

5. Copy it into `dev` as `notes-dev.txt`.

6. Rename the original to `todo.txt`.

7. List `tramuntana`: long format, hidden files too.

8. Find every file under `/etc` whose name ends in `.conf`.

9. Show only the line of `/etc/passwd` with your user.

10. Delete the folder `api`.

TASK 1 **Redirection**

1.1 Go to `~/tramuntana` and create the staff file. Type `cat > staff.csv`, press Enter, type the 13 lines below, press Enter and then `Ctrl + D`.

```
user,dept,role,year
marta,dev,backend,2019
joan,design,ui,2020
aina,admin,office,2018
pau,dev,intern,2026
```

```
biel,dev,mobile,2021
neus,dev,frontend,2022
toni,dev,devops,2020
laia,design,ux,2023
```

```
xisca,design,brand,2021
tomeu,admin,finance,2019
carme,dev,qa,2024
miquel,dev,mobile,2025
```

DONE WHEN `wc -l staff.csv` prints `13 staff.csv`.

1.2 Run `ls staff.csv nope.txt > out.txt` and then `cat out.txt`. What stayed on the screen, and why?

1.3 Run `ls staff.csv nope.txt > out.txt 2> err.txt`. What is inside `err.txt`?

1.4 Run these three lines. What is in `notes.txt` after line 2? And after line 3?

```
echo "first" > notes.txt
echo "second" > notes.txt
echo "third" >> notes.txt
```

1.5 Compare `wc -l staff.csv` and `wc -l < staff.csv`. What is different in the output?

1.6 Repeat mission 8 without the `Permission denied` lines: add `2> /dev/null` at the end.

DONE WHEN the list of `.conf` files appears with no error line.

TASK 2 **Pipelines: ask the staff file**

Build each pipeline one `|` at a time. Tools: `grep`, `cut -d, -f2`, `sort` (`-n`, `-r`, `-t, -k4`), `uniq -c`, `wc -l`, `head`, `tail` (`tail -n +2` skips the header).

2.1 Who works in design? _____

2.2 How many people are in dev? Pipeline: _____ Answer: _____

2.3 People per department, biggest first. Pipeline:

2.4 The three people who joined first (column 4 is the year). Pipeline:

2.5 Only the **user name** of the last person who joined. Pipeline:

2.6 `/etc/passwd` is a table too, separated by `:`. Column 7 is the shell of each account. Count how many accounts use each shell. Pipeline and most common shell:

DONE WHEN 2.3 prints `7 dev`, `3 design`, `2 admin` in that order, with no line `1 dept`.

TASK 3 Variables and globbing

3.1 Run `name=marta`, then `echo "Hello $name"` and `echo 'Hello $name'`. Write both outputs.

3.2 Run the two lines. What does it print?

```
n=$(tail -n +2 staff.csv | wc -l)
echo "Tramuntana has $n people"
```

3.3 Run `today=$(date +%F)` and then `mkdir backup-$today`. Name of the new folder: _____

3.4 Run `touch report-{01..12}.txt`. Then write what each pattern lists:

`ls report-0?.txt` _____ `ls report-1*.txt` _____

`ls report-[0-9][02468].txt` _____

3.5 Run `echo *.jpg`. What does it print, and why?

DONE WHEN `rm report-*.txt` leaves no `report-` file, and `staff.csv` is still there (`ls`).

TASK 4 Help and history

4.1 Run `type cd`, `type ls`, `type grep`. Which one is not a file? _____

4.2 Use `man ls` (search with `/size`, quit with `q`): which option sorts by file size? _____ And which shows sizes like `4.0K`? _____

4.3 Press `Ctrl + R` and type `uniq`. What appears? _____

EXIT TICKET Alone, no terminal. Tick one answer.

1. `find /etc -name "*.conf" > list.txt` still prints `Permission denied` on the screen. Why?

- ☐ a) `find` ignores redirection
- ☐ b) errors travel on stderr, which `>` does not move
- ☐ c) the file `list.txt` is full
- ☐ d) `>` needs `sudo`

2. `notes.txt` has 5 lines. After `echo hi > notes.txt` it has:

- ☐ a) 6 lines
- ☐ b) 5 lines
- ☐ c) 1 line
- ☐ d) 0 lines

3. `cut -d, -f2 staff.csv | uniq -c` shows `dev` several times. What is missing?

- ☐ a) `sort` before `uniq`
- ☐ b) `wc -l` at the end
- ☐ c) `-r` in `cut`
- ☐ d) `grep dev` first

4. What does `echo 'I am $USER'` print?

- ☐ a) `I am student`
- ☐ b) `I am`
- ☐ c) an error
- ☐ d) `I am $USER`

5. In `rm *.txt`, who turns `*.txt` into a list of files?

- ☐ a) `rm`
- ☐ b) the shell, before `rm` starts
- ☐ c) the kernel
- ☐ d) the file system